DOCUMENT RESUME

ED 206 647 TM 810 536

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TITLE Multivariate Analysis of Self-Perceptions.
PUB DATE Mar 81
NOTE 17p.: Paper presented at the Annual Meeting of the Eastern Educational Research Association (Philadelphia, PA, March, 1981).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Age Differences; *Educational Environment; Elementary Secondary Education; *Multivariate Analysis; *Self Concept; *Self Concept Measures; Student Attitudes; Teacher Attitudes
IDENTIFIERS *Affective Perception Inventory (Soares and Soares)

ABSTRACT

In order to refine further the process of measuring self-perceptions, nine different self-scales of the Affective Perception Inventory (API)--descriptive of academic settings--were administered to students in grades one through twelve, their peers, and their teachers. Within a multitrait-multimethod formulation, the scores yielded high internal consistency, convergent validity in some comparisons of Self and Peers, discriminant validity in specific scale-clusters, and a clear differentiation of the lower grades from the upper grades. The results suggest a multidimensional construct of self beginning at an earlier age than previously evidenced. (Author/GK)

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ED206647

Multivariate Analysis of Self-Perceptions

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Abstract

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In order to refine further the process of measuring self-perceptions, nine different self-scales descriptive of academic settings were administered to students in grades one through twelve, their peers, and their teachers. Within a multitrait-multimethod formulation, the scores yielded high internal consistency, convergent validity in some comparisons of Self and Peers, discriminant validity in specific scale-clusters, and a clear differentiation of the lower grades from the upper grades. The results suggest a multidimensional construct of self beginning at an earlier age than previously evidenced.

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Objectives

The purpose of the study was the refining of the process of measuring self-perceptions by demonstrating the age differential in both construct and discriminant validity through the process of within-network nomological research. The self concept requires definition and clarification by way of within-network studies (comparing subunits of the self construct) before proceeding to intervariable research (comparing self concept with some other variable, such as achievement), as Wylie has consistently asserted (1974). Most research has generally been of the between-network variety; but studies which have been conducted into the internal dimensions of the self have tended to describe the self concept as unitary (cf., Rosenberg & Simmons, 1973) or hierarchical (Shavelson, Hubner, & Stanton, 1976). Such studies fall short, however, since the self possesses greater complexity than either of these theoretical positions allows and continually indicates resistance to compartmentalization. Moreover, there has been little evidence of discriminant validity, perhaps because the theoretical constructs are not themselves discriminating.

A third approach is more promising in that it perceives a taxonomic model for classifying self concepts. Still another model hypothesizes differentiating self-perceptions--varying in breadth and depth--which develop independently according to experiences, reinforcement, treatment from others,

and individualized conceptualizations by way of long-term memory (Soares & Soares, 1977, 1980b).

The present study was therefore designed to refine the process of measuring self-perceptions by demonstrating the age differential in both construct and discriminant validity and by formulating a more realistic thesis for the construct of self.

Procedures

From suburban classrooms in Connecticut, 72 students were randomly selected (six from each of twelve grades), 144 peers of those students, and 96 of their teachers, giving a total subject pool of 312.

The 72 students were administered the Affective Perception Inventory (API), which measures nine dimensions of the self: (1) Self Concept as a person, (2) Self Concept as a student, (3) Self in English or Language Arts class, (4) Self in Mathematics, (5) Self in Science, (6) Self in Social Sciences, (7) Self in the Arts, (8) Self in Physical Education, and (9) Self in the School Environment. The API is a semantic differential device within a forced-choice format of four spaces of distance between pairs of sentences possessing dichotomous traits within the nine dimensions described (Soares & Soares, 1980a). The peers and teachers received the same items and scales but the wording was changed to accommodate the rater perspective. Scores from each of the nine scales were submitted to a Multitrait-Multimethod Matrix design (Campbell & Fiske, 1959), and analysis proceeded on the basis of three raters--that is, Self, Peers, and Teachers--and four perspectives of age/grade clusters: Grades 1-3, 4-6, 7-9, and 10-12. The initial analysis is noted in Table 1.

Results

Tables 2-5 provide a summary of the maximum, minimum, and median coefficients for the Monotrait-Monomethod correlations (reliability indicators), and the validity correlations for the Monotrait-Heteromethod (M-H), Heterotrait-Monomethod (H-M), and Heterotrait-Heteromethod (H-H) comparisons. The M-M correlations--reliability indicators, as obtained by the split-half method of Rulon (1939)--yielded fairly high reliability coefficients of internal consistency. The highest values were obtained on the self-ratings and for grades 10-12.

The M-H validfty coefficients indicated the greatest agreement of self- and peer-ratings (.73) from School Perceptions in grades 7-9 and a coefficient of .84 in grades 1-3. Most of the M-H coefficients were larger than the median heterotrait-heteromethod correlations noted below. The lowest coefficients were generally found on the Arts scale.

The H-M correlations tended to show the greatest convergence of Self Concept and Student Self and the greatest divergence (or lowest convergence) on Mathematics and Physical Education.

Construct validity requires the lowest coefficients with the H-H correlations, and such was the case with few exceptions. As with the M-H and H-M coefficients, the H-H correlations were highest for grades 1-3 and lowest for grades 10-12, probably as a result of the greater dispersion of the scores in the latter age/grade group.

Conclusions

Internal consistency was found with all age groups. Although there was some confounding of self-pictures with the views of the self held by significant others--peers and teachers--for the younger subjects, all students

seemed to be fairly discriminating about the pictures they hold of themselves in various contexts, such as mathematics specifically or self as a student in general. Of course, the older students have shaped their self concepts more distinctly than the younger ones, but the latter are seemingly more differentiating than might be generally supposed. Surprisingly, teachers seem to be less perceptive than the peers of the students, which may be more a function of level of achievement as measured or determined by the teacher's method of assessment and less the conceptualization of the internal self.

Loevinger (1966) has indicated that the ability to form a self concept increases with age and education. As the ability to do so develops, the organism gradually forms a somewhat stereotyped, conventional, and socially acceptable concept of itself. With increasing maturity, the organism moves from such a predictable concept of self to one which is more differentiated and, perhaps, realistic. The results of the present tend to support some of Loevinger's theoretical foundation, as briefly outlined above, but not completely. The present research suggests that the process of self-conceptualization may begin somewhat earlier than previously evidenced and also that the process of individualized differentiation may be evolving at an earlier age than some experts have hypothesized.

Although much additional research is required--at many levels--the evidence so far accumulated suggests not a general self concept influencing all behavior of individuals and not a hierarchical self concept which subsumes several role-descriptive selves; nor even a classificatory model which systematically categorizes dimensions of self concept. Rather, self-perceptions would seem to be varied and multiple, providing congruent and differentiating

dynamics both horizontally or interpersonally and vertically or intrapersonally. The genesis of this position suggests an interfacing of cognitive dimensions and behavioral determinants. Accordingly, self-perceptions--varying in breadth and depth--would seem to develop independently according to experiences, capabilities, treatment from others, and individualized pattern-detecting mechanisms by way of long-term memory. Figure 1 is a configuration of this theoretical position.

REFERENCES

Campbell, D. T., & Fiske, D. W. Convergent and discriminant validation by the multitrait-multimethod matrix. Psychological Bulletin, 1959, 56, 81-105.

Loevinger, J. The meaning and measurement of ego development. American Psychologist, 1966, 21, 195-206.

Rosenberg, M., & Simmons, R. G. Black and white self-esteem: The urban school child. Washington, D. C.: American Sociological Association, 1973.

Rulon, P. J. A simplified procedure for determining the reliability of a test of split halves. Harvard Educational Review, 1939, 9, 99-103.

Shavelson, R. J., Hubner, J. J., & Stanton, G. C. Self-concept: Validation of construct interpretations. Review of Educational Research, 1976, 46, 407-441.

Soares, L. M., & Soares, A. T. The self concept: Mini, maxi, multi? New York: Annual meeting of the American Educational Research Association, 1977.

Soares, A. T., & Soares, L. M. The Affective Perception Inventory (API): Composite test manual. Trumbull, Connecticut: SOARES Associates, 1980a.

Soares, L. M., & Soares, A. T. A multitrait-multimethod matrix for self-perceptions: Implications for discriminant validity. Boston, Massachusetts: Annual meeting of the American Educational Research Association, 1980b.

Wylie, R. C. The self concept. (Vol. I). Lincoln, Nebraska: University of Nebraska Press, 1974.

Table 1

Multitrait-Multimethod Matrix

		Method 1								
		1	2	3	4	5	6	7	8	9
Method 1										
Scale	1	(.94)								
	2	.47	(.79)							
	3	.44	.65	(.89)						
	4	.27	.38	.27	(.81)					
	5	.41	.35	.37	.37	(.88)				
	6	.38	.39	.33	.25	.33	(.88)			
	7	.25	.42	.46	.13	.33	.23	(.63)		
	8	.45	.35	.23	.24	.41	.29	.21	(.84)	
	9	.45	.41	.49	.40	.46	.38	.38	.35	(.83)
Method 2										
Scale	1	[.49]	.32	.23	.20	.30	.11	.03	.32	.38
	2	.33	[.50]	.42	.40	.38	.20	.03	.19	.48
	3	.12	.45	[.49]	.41	.27	.09	.14	.05	.53
	4	.17	.38	.29	[.55]	.31	.07	.11	.19	.52
	5	.17	.46	.30	.25	[.51]	.14	.01	.22	.33
	6	.25	.36	.43	.24	.20	[.39]	.18	.16	.42
	7	.09	.17	.15	.09	.04	.11	[.38]	.02	.26
	8	.15	.14	.22	.05	.05	.20	.09	[.44]	.19
	9	.34	.50	.42	.47	.36	.16	.26	.14	[.76]
method 3										
Scale	1	[.37]	.50	.29	.03	.13	.21	.17	.24	.23
	2	.30	[.74]	.41	.06	.23	.20	.19	.21	.36
	3	.29	.43	[.50]	.10	.28	.30	.24	.19	.43
	4	.06	.28	.23	[.47]	.25	.09	.05	.20	.26
	5	.22	.42	.27	.23	[.47]	.17	.03	.06	.30
	6	.25	.27	.37	.22	.14	[.47]	.07	.03	.46
	7	.06	.08	.20	.10	.08	.12	[.30]	.16	.23
	8	.29	.34	.34	.16	.11	.12	.02	[.33]	.33
	9	.34	.29	.24	.04	.23	.13	.20	.35	[.34]

		Method 2								
		1	2	3	4	5	6	7	8	9
Method 1										
Scale	1	(.82)								
	2	.49	(.71)							
	3	.51	.63	(.80)						
	4	.51	.62	.42	(.85)					
	5	.27	.50	.27	.50	(.81)				
	6	.38	.52	.48	.53	.38	(.78)			
	7	.39	.36	.40	.35	.35	.34	(.61)		
	8	.27	.33	.25	.22	.32	.38	.30	(.69)	
	9	.31	.59	.60	.52	.31	.51	.26	.33	(.68)
Method 2										
Scale	1	[.35]	.36	.30	.03	.14	.15	.14	.07	.53
	2	.36	[.40]	.11	.08	.12	.25	.12	.08	.62
	3	.03	.40	[.57]	.39	.36	.13	.17	.02	.32
	4	.22	.16	.31	[.29]	.20	.18	.24	.02	.09
	5	.20	.28	.56	.13	[.30]	.26	.31	.38	.12
	6	.02	.03	.09	.05	.15	[.28]	.20	.17	.01
	7	.33	.09	.20	.11	.04	.20	[.26]	.17	.31
	8	.13	.27	.07	.26	.18	.20	.20	[.27]	.12
	9	.46	.51	.08	.21	.13	.22	.14	.11	[.80]

		Method 3							
		1	2	3	4	5	6	7	8
Method 1									
Scale	1	(.66)							
	2	.72	(.82)						
	3	.71	.73	(.87)					
	4	.09	.27	.31	(.86)				
	5	.14	.41	.45	.52	(.84)			
	6	.42	.46	.44	.13	.27	(.82)		
	7	.08	.04	.22	.10	.12	.20	(.66)	
	8	.28	.36	.29	.22	.14	.13	.03	(.81)
	9	.48	.70	.70	.21	.21	.28	.11	.29

KEY: Method 1--Self
Method 2--Peers
Method 3--Teachers

Scale 1--Self Concept
Scale 2--Student Self
Scale 3--Language Arts (English)
Scale 4--Mathematics
Scale 5--Science
Scale 6--Social Studies
Scale 7--The Arts
Scale 8--Physical Education
Scale 9--School

Table 2

Summary of Monotrait-Monomethod Coefficients

for Perceptions of Self, Peers, and Teachers

in Comparison of Grade Clusters

Group	Grade Cluster	Max	Min	Median
SELF	1-3	.88	.40	.56
	4-6	.96	.75	.91
	7-9	.97	.89	.93
	10-12	.98	.91	.96
PEERS	1-3	.80	.44	.63
	4-6	.92	.72	.89
	7-9	.94	.86	.91
	10-12	.96	.89	.92
TEACHERS	1-3	.77	.50	.60
	4-6	.91	.75	.84
	7-9	.93	.89	.90
	10-12	.94	.88	.92

Table 3

Summary of Monotrait-Heteromethod Coefficients

for Perceptions of Self, Peers, and Teachers

in Comparison of Grade Clusters

Group	Grade Cluster	Max	Min	Median
Self/Peers	1-3	.84	.38	.51
	4-6	.70	.45	.53
	7-9	.73	.41	.49
	10-12	.62	.42	.55
Self/Teachers	1-3	.57	.31	.43
	4-6	.71	.30	.55
	7-9	.64	.37	.53
	10-12	.60	.40	.48
Peers/Teachers	1-3	.46	.26	.33
	4-6	.60	.40	.49
	7-9	.61	.30	.49
	10-12	.56	.30	.42

Table 4

Summary of Heterotrait-Monomethod Coefficients

for Perceptions of Self, Peers, and Teachers

in Comparison of Grade Clusters

Group	Grade Cluster	Max	Min	Median
SELF	1-3	.66	.20	.41
	4-6	.51	.17	.37
	7-9	.43	.21	.48
	10-12	.43	.13	.40
PEERS	1-3	.63	.24	.40
	4-6	.56	.22	.38
	7-9	.58	.25	.39
	10-12	.51	.22	.46
TEACHERS	1-3	.73	.03	.32
	4-6	.61	.10	.33
	7-9	.55	.08	.46
	10-12	.52	.09	.27

Table 5

Summary of Heterotrait-Heteromethod Coefficients

for Perceptions of Self, Peers, and Teachers

in Comparison of Grade Clusters

Group	Grade Cluster	Max	Min	Median
Self/Peers	1-3	.52	.03	.34
	4-6	.53	.01	.20
	7-9	.46	.01	.20
	10-12	.42	.02	.24
Self/Teachers	1-3	.50	.02	.34
	4-6	.48	.03	.28
	7-9	.44	.02	.29
	10-12	.45	.04	.32
Peers/Teachers	1-3	.58	.01	.30
	4-6	.61	.02	.18
	7-9	.62	.01	.39
	10-12	.57	.03	.36

Figure 1

Configuration of the Etiology

of

Self-Perceptions